

WHAT IS CLAIMED IS:

- 1 1. A method comprising:
2 identifying a first set of physical storage devices to reserve as backup for a second set of
3 physical storage devices configured to provide a logical volume,
4 wherein
5 the second set of physical storage devices is configured using an intent associated
6 with the logical volume, and
7 each physical storage device of the first set of physical storage devices and the second
8 set of physical storage devices conforms to the intent.
- 1 2. The method of claim 1 further comprising:
2 reserving the first set of physical storage devices.
- 1 3. The method of claim 2 wherein
2 the reserving the first set of physical storage devices occurs at a time that the second set of
3 physical storage devices is configured to provide the logical volume.
- 1 4. The method of claim 2 further comprising:
2 selecting a backup physical storage device of the first set of physical storage devices to
3 replace a failed physical storage device of the second set of physical storage devices.
- 1 5. The method of claim 4 wherein
2 the backup physical storage device conforms to the intent such that the selecting the backup
3 physical storage device is performed without searching for the backup physical
4 storage device.
- 1 6. The method of claim 2 further comprising:
2 using a backup physical storage device of the first set of physical storage devices to increase
3 a size of the logical volume.
- 1 7. The method of claim 1 wherein
2 the intent comprises a rule used to configure the second set of physical storage devices for the
3 logical volume.

- 1 8. The method of claim 1 wherein
2 the rule is stored with the logical volume when the logical volume is configured.
- 1 9. The method of claim 1 wherein
2 the rule corresponds to a command used to configure the logical volume.
- 1 10. The method of claim 1 wherein
2 the rule is used to identify the available physical storage devices to configure the logical
3 volume.
- 1 11. The method of claim 1 wherein
2 the rule is used to identify available physical storage devices from which the first set of
3 physical storage devices is identified.
- 1 12. The method of claim 1 wherein
2 the intent is stored with the logical volume when the logical volume is configured.
- 1 13. The method of claim 1 wherein
2 the logical volume is created when the logical volume is configured.
- 1 14. The method of claim 1 further comprising:
2 providing availability of the logical volume by ensuring that the first set of physical storage
3 devices is available and conforms to the intent of the logical volume.
- 1 15. The method of claim 14 wherein
2 the availability of the logical volume meets an availability requirement.
- 1 16. A system comprising:
2 identifying means for identifying a first set of physical storage devices to reserve as backup
3 for a second set of physical storage devices configured to provide a logical volume,
4 wherein
5 the second set of physical storage devices is configured using an intent associated
6 with the logical volume, and
7 each physical storage device of the first set of physical storage devices and the second
8 set of physical storage devices conforms to the intent.

1 17. The system of claim 16 further comprising:
2 reserving means for reserving the first set of physical storage devices.

1 18. The system of claim 17 wherein
2 the reserving the first set of physical storage devices occurs at a time that the second set of
3 physical storage devices is configured to provide the logical volume.

1 19. The system of claim 17 further comprising:
2 selecting means for selecting a backup physical storage device of the first set of physical
3 storage devices to replace a failed physical storage device of the second set of
4 physical storage devices.

1 20. A computer-readable medium comprising:
2 identifying instructions configured to identify a first set of physical storage devices to reserve
3 as backup for a second set of physical storage devices configured to provide a logical
4 volume, wherein
5 the second set of physical storage devices is configured using an intent associated
6 with the logical volume, and
7 each physical storage device of the first set of physical storage devices and the second
8 set of physical storage devices conforms to the intent.

1 21. The computer-readable medium of claim 20 further comprising:
2 reserving instructions configured to reserve the first set of physical storage devices.

1 22. The computer-readable medium of claim 21 wherein
2 the reserving the first set of physical storage devices occurs at a time that the second set of
3 physical storage devices is configured to provide the logical volume.

1 23. The computer-readable medium of claim 21 further comprising:
2 selecting instructions configured to select a backup physical storage device of the first set of
3 physical storage devices to replace a failed physical storage device of the second set
4 of physical storage devices.

1 24. A system comprising:

an identifying module configured to identify a first set of physical storage devices to reserve as backup for a second set of physical storage devices configured to provide a logical volume, wherein the second set of physical storage devices is configured using an intent associated with the logical volume, and each physical storage device of the first set of physical storage devices and the second set of physical storage devices conforms to the intent.

25. The system of claim 24 further comprising:

a reserving module configured to reserve the first set of physical storage devices.

26. The system of claim 25 wherein

the reserving module reserves the first set of physical storage devices at a time that the second set of physical storage devices is configured to provide the logical volume.

27. The system of claim 25 further comprising:

a selecting module configured to select a backup physical storage device of the first set of physical storage devices to replace a failed physical storage device of the second set of physical storage devices.